

# MASPS for ADS-B

## Rev. A

Tracking Information (committee secretary only)	
Change Issue Number	41
Submission Date	06/04/01
Status (open/closed/deferred)	Rev. A - CLOSED
Last Action Date	2/22/02

Short Title for Change Issue:	Emergency Locator Transmitter Functionality
-------------------------------	---

MASPS Document Reference:		Originator Information:	
Entire document (y/n)		Name	Bill Flathers
Section number(s)	Appendix E +	Phone	(703) 883-7578
Paragraph number(s)		E-mail	Bill.Flathers@AOPA.org
Table/Figure number(s)		Other	

Proposed Rationale for Consideration (originator should check all that apply):	
<input checked="" type="checkbox"/>	Item needed to support of near-term MASPS/MOPS development
<input checked="" type="checkbox"/>	DO-260/ED-102 1090 MHz Link MOPS Rev A
<input type="checkbox"/>	ASA MASPS
<input type="checkbox"/>	TIS-B MASPS
<input checked="" type="checkbox"/>	UAT MOPS
<input checked="" type="checkbox"/>	Item needed to support applications that have well defined concept of operation
<input type="checkbox"/>	Has complete application description
<input type="checkbox"/>	Has initial validation via operational test/evaluation
<input type="checkbox"/>	Has supporting analysis, if candidate stressing application
<input type="checkbox"/>	Item needed for harmonization with international requirements
<input type="checkbox"/>	Item identified during recent ADS-B development activities and operational evaluations
<input checked="" type="checkbox"/>	MASPS clarifications and correction item
<input checked="" type="checkbox"/>	Validation/modification of questioned MASPS requirement item
<input type="checkbox"/>	Military use provision item
<input type="checkbox"/>	New requirement item (must be associated with traffic surveillance to support ASAS)

Nature of Issue:	<input type="checkbox"/>	Editorial	<input type="checkbox"/>	Clarity	<input type="checkbox"/>	Performance	<input checked="" type="checkbox"/>	Functional
<u>Issue Description:</u>  <p>The current MASPS briefly mention (in Appendix E and elsewhere) the possible use of ADS-B to aid or replace Emergency Locator Transmitters (ELTs) for GA. While it is acknowledged that the ELT function is not a primary function of ADS-B, there are several recent developments that make it more attractive to the full spectrum of airspace users, and therefore worthy of more comprehensive treatment in the MASPS. First, potentially expensive ELT upgrades are on the horizon for GA as search-and-rescue (SAR) service providers push for technology enhancements to improve performance and reduce SAR costs. Second, there is growing pressure for <i>all</i> aircraft, including air-carrier aircraft which are now exempt from the ELT requirement, to be ELT-equipped. This is in response to recent accidents in which an extended period of time had passed before local authorities became aware that an accident had occurred. Also, there is interest in obtaining better position information for accident sites in order to provide more timely and better direction to SAR crews, especially at night and in reduced visibility. Given these factors, it seems appropriate to exploit this function of ADS-B in order to provide additional incentive and benefit for users to equip.</p>								

Originator's proposed resolution:

Three actions are proposed to address this issue. First is a review of the MASPS to ensure that nothing in the current version effectively negates any potential that ADS-B might have to support this ELT role. It would also be helpful to review available versions of the ADS-B MOPS to see how well these more-focused documents make provision for this role. Second, it would be desirable to establish, through a bona fide concept of operations, what other message elements need to be created to support this application, along with a notional architecture and protocol for making use of them. Finally, this work needs to be captured in the MASPS in a way that lends credence to the viability and potential of the application.

It is important to note that this proposal is *not* an invitation to delve into crash hardening, battery power management, and other ELT issues that are covered in other documents. Nor is it suggested that ELT functionality be part of the minimum requirements for ADS-B. Rather, this proposal is offered simply to provide an attractive option for airspace users to obtain cost-effective and useful ELT functionality.

Working Group 6 Deliberations:

August 30, 2001: This Issue Paper was reviewed at the August WG6 meeting. It was agreed this Issue Paper will be addressed in Revision A. The resolution to this Issue Paper will be to define one of the unused Emergency/Priority Status messages in 2.1.2.3.1 for a crash situation and to add some words to Appendix E that an ELT is a potential function supported by ADS-B. (AI 7-10)

September 27, 2002: he proposed MASPS changes requested in AI 7-10 were prepared by Bill Flathers and agreed to by WG6. These text changes will close this Issue Paper.

Working Group 6 Final Resolution:

A new value ("Downed Aircraft") was defined for the Emergency/Priority Status element of the Mode Status report. Section 3.4.4.8, which defines the Emergency/Priority Status, is found below as it appears in the draft DO-242A delivered to RTCA on March 4, 2002.

**3.4.4.8 Emergency/Priority Status Field**

The emergency/priority status field in the MS report is a 3-bit field which **shall** (R3.104) be encoded as indicated in Table 3.4.4.8.

**Table 3.4.4.8: Emergency/Priority Status Encoding**

Value	Meaning
0	No emergency / not reported
1	General emergency
2	Lifeguard / medical emergency
3	Minimum fuel emergency
4	No communications
5	Unlawful interference
6	Downed Aircraft
7	(Reserved for future definition)